

Question 22 (6 marks)

A student prepared the compound methyl propanoate in a school laboratory.

- (a) Give a common use for the class of compounds to which methyl propanoate belongs. 1

Being an ester, it is used as a sweet-smelling
odourant or deodorant.

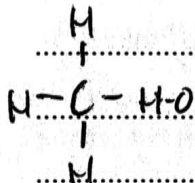
- (b) In the preparation of this compound a few drops of concentrated sulfuric acid were added to the starting materials. The mixture was then refluxed for a period of time. 2

Why was it necessary to reflux the mixture?

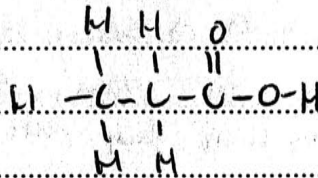
Refluxing the mixture makes sure that the reaction
can take place at a high temperature while at the same
time, the volatile products do not escape from the reaction.
It is also a safety precaution as it ensures oxidising
gases do not escape.

- (c) Name the TWO reactants used in preparing the methyl propanoate and draw their structural formulae. 3

Methanol and Propanoic acid.



methanol



propanoic acid